Mini-Map for SCI.EE.5.LS.EcoHlth-2

Subject: Science
Life Science (LS)
Grade band: 3–5

Grade-Level Expectation

DLM Essential Element	DLM Disciplinary Core Idea Family[1]	Framework Disciplinary Core Ideas
SCI.EE.5.LS.EcoHlth-2 Ask questions to determine how living things (both plants and animals) impact the habitat in which they live.	Life Science – Ecosystem Health	LS2.A: Interdependent Relationships in Ecosystems LS2.C: Ecosystem Dynamics, Functioning, and Resilience LS4.D: Biodiversity and Humans ESS2.A: Earth Materials and Systems ESS2.D: Weather and Climate ESS2.E: Biogeology ESS3.A: Natural Resources

[1] DLM Science Essential Elements organize Disciplinary Core Ideas (defined in the *Framework for K-12 Science Education*) into DCI families. By combining similar concepts within a domain, science content from the general education standards is reduced in depth, breadth, and complexity to provide access for students that qualify for the DLM alternate assessment.

Linkage Level Descriptions

Initial Precursor	Distal Precursor	Proximal Precursor	Target[2]
Anticipate the resulting action or event following the completion of the current action or event within the sequence of a familiar routine, game, or activity.	Identify and respond to simple questions to determine the differences between living (i.e., animals) and nonliving (i.e., neither plants nor animals) things to identify whether a thing is living or nonliving.	Use questions to elicit information that describes different living things and the different places in which they live (i.e., habitats).	Use questions to obtain an understanding of how the life activities of plants and animals impact the habitat in which they live.

[2] The target linkage level description is a measurement target that describes the expectations (content and performance) of the Essential Element for assessment purposes.

Essential Element Three Dimensions

Each Essential Element is defined in the three dimensions described in the *Framework for K-12 Science Education*: disciplinary core ideas (DCIs), science and engineering practices (SEPs), and crosscutting concepts (CCCs). The table below lists the details of each dimension from the individual DLM Essential Element descriptions, with color-coding of dimensions corresponding to the Next Generation Science Standards (NGSS). The first row (in blue) lists the SEP(s) used to construct the Essential Element and describes ways each SEP could be incorporated. The second row (in orange) describes the science concepts within the DCI family related to this Essential Element. The third row (in green) lists the CCC(s) associated with the Essential Element and explains how each might be incorporated in the grade band (quoted from NSTA, 2013, matrix of CCCs). Note that the SEP is presented first here (rather than second, as it is in the full list of Essential Elements) to reflect the emphasis on practices in instruction and across the linkage levels. The final row (in white) includes examples of how the three dimensions could work together to support instruction for the Essential Element. These examples provide ideas for integrating the dimensions and are not exhaustive, nor are they intended to limit instruction.

Science and Engineering Practices	**Asking Questions and Defining Problems:** Asking questions and defining problems in grades 3–5 builds on K–2 experiences and progresses to identifying questions to gain information through investigation. • Develop questions that can help determine relationships. **Obtaining, Evaluating, and Communicating Information:** Obtaining, evaluating, and communicating information in grades 3–5 builds on K–2 experiences and progresses to describing scientific ideas. • Use observations, images, simple texts, and other media to understand problems and determine how the natural world works. • Use information (e.g., observations, images, graphs, maps) to answer questions and support scientific ideas.

Disciplinary Core Ideas	**Ecosystem Health**
	• Healthy ecosystems have a diversity of plants and animals in a fairly stable environment.
	• Organisms live where they can find enough food, water, space, and place to raise their young.
	• Living things can impact the physical characteristics of where they live.
	  o Animals aid in plant pollination and seed dispersal.
	  o Impacts can be positive or negative.
	• Populations live in a variety of habitats, and change in those habitats affects the organisms living there.

Crosscutting Concepts	**Cause and Effect**: Events have causes, sometimes simple, sometimes multifaceted. Deciphering causal relationships, and the mechanisms by which they are mediated, is a major activity of science and engineering. • Cause and effect relationships are routinely identified, tested, and used to explain change. • Events that occur together with regularity might or might not be a cause and effect relationship.

	System and System Models: A system is an organized group of related objects or components; models can be used for understanding and predicting the behavior of systems. • A system is a group of related parts that make up a whole and can carry out functions its individual parts cannot. • A system can be described in terms of its components and their interactions. **Stability and Change**: For both designed and natural systems, conditions that affect stability and factors that control rates of change are critical elements to consider and understand. • Change is measured in terms of differences over time and may occur at different rates. • Some systems appear stable, but over long periods of time will eventually change.
How three dimensions support instruction for this Essential Element	Students can use questions and information to understand and predict how the actions of living things relate to and impact the habitats they live in. The concepts of system and system models are part of identifying an ecosystem as a type of system and understanding interactions among various components, including plants, animals, and their environment. For example, students can learn about how the population of one species can affect other aspects of their habitat (e.g., a higher wolf population leads to a lower elk population, which then allows plants to flourish and protect riverbanks). Students can also understand different ways in which these components of an ecosystem interact, such as an animal moving parts of plants around the environment, raising young, and consuming food and water. As students learn that features of an ecosystem can change or can stay the same over time, they come to understand how stability and change are part of ecosystems. Students can determine that change in habitats affects the organisms that live there, that stable ecosystems have fewer changes than unstable ones, and that healthy ecosystems tend to be fairly stable.

Instructional Resources

Resources
Learning modules and additional science instructional resources can be found at https://www.dlmpd.com/science/
A glossary defining key science terms found in the Essential Elements can be found at DLM Glossary for Science Learning Maps.

Link to Text-Only Map

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